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## TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission

|                        |                   |
|------------------------|-------------------|
| Application Number     | 10/706,586        |
| Filing Date            | 11/12/2003        |
| First Named Inventor   | John Brian Pendry |
| Art Unit               | 2821              |
| Examiner Name          |                   |
| Attorney Docket Number | 8068              |

### ENCLOSURES (check all that apply)

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| <input type="checkbox"/> Fee Transmittal Form<br><input type="checkbox"/> Fee Attached<br><input type="checkbox"/> Amendment / Reply<br><input type="checkbox"/> After Final<br><input type="checkbox"/> Affidavits/declaration(s)<br><input type="checkbox"/> Extension of Time Request<br><input type="checkbox"/> Express Abandonment Request<br><input checked="" type="checkbox"/> Information Disclosure Statement<br><input type="checkbox"/> Certified Copy of Priority Document(s)<br><input type="checkbox"/> Reply to Missing Parts/ Incomplete Application<br><input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53 | <input type="checkbox"/> Drawing(s)<br><input type="checkbox"/> Licensing-related Papers<br><input type="checkbox"/> Petition<br><input type="checkbox"/> Petition to Convert to a Provisional Application<br><input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address<br><input type="checkbox"/> Terminal Disclaimer<br><input type="checkbox"/> Request for Refund<br><input type="checkbox"/> CD, Number of CD(s) ____<br><input type="checkbox"/> Landscape Table on CD | <input type="checkbox"/> After Allowance Communication to TC<br><input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences<br><input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)<br><input type="checkbox"/> Proprietary Information<br><input type="checkbox"/> Status Letter<br><input checked="" type="checkbox"/> Other Enclosure(s) (please identify below):<br>Transmittal of Information Disclosure Statement Within Three Months of Filing or Before Mailing of First Office Action<br>Copies of Non-Patent References |
|---|---|--|

### Remarks

### SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

|              |                                  |          |        |
|--------------|----------------------------------|----------|--------|
| Firm         | Reinhart Boerner Van Deuren s.c. |          |        |
| Signature    |                                  |          |        |
| Printed Name | Leslie S. Miller                 |          |        |
| Date         | December 27, 2004                | Reg. No. | 30,662 |

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I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.

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| Signature             |                  |      |                   |
| Typed or printed name | Leslie S. Miller | Date | December 27, 2004 |

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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## PATENT APPLICATION

Reinhart Boerner Van Deuren s.c.

By: Leslie S. Miller

Date: December 27, 2004

### IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

GROUP ART UNIT: 2821

EXAMINER: UNKNOWN

In re application of: )  
John Brian Pendry )

Application No: 10/706,586 )

Filed: 11/12/2003 )

Confirmation No.: 6680 )

Attorney Docket No. 8068 )

Customer No. 22922 )

For: NARROW BEAM ANTENNAE

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

December 27, 2004

### TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT WITHIN THREE MONTHS OF FILING OR BEFORE MAILING OF FIRST OFFICE ACTION (37 CFR 1.97(b))

NOTE: "An information disclosure statement shall be considered by the Office if filed: (1) within three months of the filing date of a national application; (2) within three months of the date of entry of the national stage as set forth in § 1.491 in an international application; or (3) before the mailing date of a first Office action on the merits, whichever event occurs last." 37 CFR 1.97(b).

*NOTE: The "filing date of a national application" under 37 CFR 1.97(b) has two possible meanings. Where the filing is a direct one to the United States Patent & Trademark Office, the filing is defined in 37 CFR 1.53(b) as "the date on which: (1) A specification containing a description pursuant to § 1.71 and at least one claim pursuant to § 1.75; and (2) any drawing required by § 1.81(a), are filed in the Patent and Trademark Office in the name of the actual inventor or inventors as required by § 1.41." 37 CFR 1.97(b)(1). On the other hand, an international application that enters the national stage occurs when the applicant has filed the documents and fees required by 35 U.S.C. § 371(c) within the periods set forth in § 1.494 or § 1.495. 35 U.S.C. § 371(c) requires the filing of the following: (1) the national fee; (2) a copy of the international application, unless already sent by the International Bureau, and an English translation if filed in another language; (3) amendments under PCT Article 19, with a translation into English if made in another language; (4) an oath or declaration; and (5) a translation into English of any annexes to the International preliminary examination report, if such annexes were made in another language. 37 CFR 1.97(b)(2).*

## **IDENTIFICATION OF TIME OF FILING THE ACCOMPANYING INFORMATION DISCLOSURE STATEMENT**

The information disclosure statement submitted herewith is being filed within three months of the filing date of the application or date of entry into the national stage of an international application or before the mailing date of a first Office action on the merits, whichever event occurs last. 37 CFR 1.97(b).

**NOTE:** "No certification or fee is due when the filing is made within the above time period. It is advisable to ensure that no Office action has been mailed if the disclosure statement is delayed until after three months from filing.


**NOTE:** "An information disclosure statement will be considered to have been filed on the day it was received in the Office, or on an earlier date of a mailing if accompanied by a properly executed certificate of mailing under 37 CFR 1.8, or Express Mail certificate under 37 CFR 1.10. An Office action is mailed on the date indicated in the Office action." Notice of April 20, 1992 (1138 O.G. 37-41, 39).

**NOTE:** "The term 'national application' includes continuing applications (continuations, divisions, continuations-in-part) so three months will be measured from the actual filing date of an application as opposed [sic] to the effective date of a continuing application." Notice of April 20, 1992 (1138 O.G. 37-41, 39).

**NOTE:** "An action on the merits means an action which treats the patentability of the claims in an application, as opposed to only formal or procedural requirements. An action on the merits would, for example, contain a rejection or indication of allowability of a claim or claims rather than just a restriction requirement (37 CFR 1.142) or just a requirement for additional fees to have a claim considered (37 CFR 1.16(d)). Thus, if an application was filed on Jan. 1 and the first Office action on the merits was not mailed until six months later on July 1, the examiner would be required to consider any proper information disclosure statement filed prior to July 1." Notice of April 20, 1992 (1138 O.G. 37-41, 39).

**WARNING:** "A petition for suspension of action to allow applicant time to submit an information disclosure statement will be denied as failing to present good and sufficient reasons, since 37 CFR 1.97 provides adequate recourse for the timely submission of prior art for consideration by the examiner." Notice of July 6, 1992 (1141 O.G. 63).

Dated: December 27, 2004  
Reg. No. 30,662  
Tel. No.: (414) 298-8321

  
\_\_\_\_\_  
SIGNATURE OF ATTORNEY  
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Attn: Linda Gabriel, Docket Clerk  
Milwaukee, WI 53202

**CUSTOMER NO. 22922**



PTO/SB/08a (08-03)

Approved for use through 07/31/2006. OMB 0651-0031

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**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet

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of

1

**Complete if Known**

|                        |                   |
|------------------------|-------------------|
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| First Named Inventor   | John Brian Pendry |
| Art Unit               | 2821              |
| Examiner Name          |                   |
| Attorney Docket Number | 8068              |

**NON PATENT LITERATURE DOCUMENTS**

| Examiner<br>Initials * | Cite<br>No. <sup>1</sup> | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.   | T <sup>2</sup> |
|------------------------|--------------------------|---|----------------|
|                        |                          | Bessel Functions – Orders 3-9, Bessel Functions of Integer Order, Compiled from British Association for the Advancement of Science, Bessel functions, Part II. Functions of positive integer order, Mathematical Tables, vol. X (Cambridge Univ. Press, Cambridge, England, 1952) and Mathematical Tables Project, Table of $fn(s)=n!/(1/2X)-^2J_n(x)$ . J. Math. Phys. 23, 45-60 (1944) (with permission). |                |
|                        |                          | WOODWARD, P.M., and LAWSON, J.D., "The Theoretical Precision with Which an Arbitrary Radiation-Pattern may be Obtained from a Source of Finite Size." Journal I.E.E., Vol. 95, Part III, No. 37, September 1948.  |                |
|                        |                          | VESELAGO, V.G., "The Electrodynamics of Substances with Simultaneously Negative Values of $\epsilon$ and $\mu$ , Soviet Physics USPEKHI, Vol. 10, No. 4, January-February 1968.   |                |
|                        |                          | PENDRY, J.B., HOLDEN, A.J., STEWART, W.J., and YOUNGS, I., "Extremely Low Frequency Plasmons in Metallic Microstructures." Phys. Rev. Lett. 76, 4773-6, (1996).   |                |
|                        |                          | PENDRY, J.B., HOLDEN, A.J., ROBBINS, D.J., and STEWART, W.J., "Low Frequency Plasmons in Thin-Wire Structures." J. Phys. Condens. Matter, 10 (1998) pp. 4785-4809.  |                |
|                        |                          | PENDRY, J.B., HOLDEN, A.J., ROBBINS, D.J., and STEWART, W.J., "Magnetism from Conductors and Enhanced Nonlinear Phenomena." IEEE Transactions on Microwave Theory and Techniques, Vol. 47, No. 11, November 1999, pp. 2075-2084.  |                |
|                        |                          | SMITH, D.R., PADILLA, W.J., VIER, D.C., NEMAT-NASSER, S.C., and SCHULTZ, S., "Composite Medium with Simultaneously Negative Permeability and Permittivity." Physical Review Letters, The American Physical Society, Vol. 84, Number 18, 1 May 2000.   |                |
|                        |                          | PENDRY, J.B., "Negative Refraction Makes a Perfect Lens." Physical Review Letters, Vol. 85, No. 18, 30 October 2000, pp. 3966-3969.   |                |
|                        |                          | WARD, A.J., and PENDRY, J.B., "Refraction and Geometry in Maxwell's Equations." Journal of Modern Optics, 1996, vol. 43, no. 4, pp. 773-793.  |                |
|                        |                          | PENDRY, J.B., and RAMAKRISHNA, S.A., "Focusing Light Using Negative Refraction." J. Phys. Condens. Matter 15 (2003), pp. 6345-6364.   |                |
|                        |                          |   |                |

Examiner  
SignatureDate  
Considered

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

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